

***120Le Pentium III Processor
Installation Insert***

Proprietary Notice and Liability Disclaimer

The information disclosed in this document, including all designs and related materials, is the valuable property of NEC Computers Inc. and/or its licensors. NEC Computers Inc. and/or its licensors, as appropriate, reserve all patent, copyright and other proprietary rights to this document, including all design, manufacturing, reproduction, use, and sales rights thereto, except to the extent said rights are expressly granted to others.

The NEC Computers Inc. product(s) discussed in this document are warranted in accordance with the terms of the Warranty Statement accompanying each product. However, actual performance of each such product is dependent upon factors such as system configuration, customer data, and operator control. Since implementation by customers of each product may vary, the suitability of specific product configurations and applications must be determined by the customer and is not warranted by NEC Computers Inc.

To allow for design and specification improvements, the information in this document is subject to change at any time, without notice. Reproduction of this document or portions thereof without prior written approval of NEC Computers Inc. is prohibited.

Trademarks

Intel and Pentium III are registered trademarks of Intel Corporation.

All other product, brand, or trade names used in this publication are the trademarks or registered trademarks of their respective trademark owners.

PN: 455-01616-001

July 2001

Copyright 2001
NEC Computers Inc.
15 Business Park Way
Sacramento, CA 95828
All Rights Reserved

Introduction

This *Intel® Pentium® III Processor Installation Insert* provides information for installing the Pentium III processor upgrade into your 120Le system. Read this procedure in its entirety before performing the installation to become familiar with the items in this upgrade and the sequence of steps you will perform.

Unpacking the Upgrade

When you receive your Pentium III processor upgrade, inspect the shipping container prior to unpacking. If the shipping box is damaged, note the damage, and if possible, photograph it for reference. After removing the contents of the container, keep the carton and the packing materials. If the contents appear damaged when you unpack the box, file a damage claim with the carrier immediately.

Installing the Upgrade



CAUTION

Observe static precautions. Use an antistatic wrist strap. Hold the processor only by its edges. Do not touch the pins of the processor board.



CAUTION

Installing a second processor that is of a different type than the first processor will result in system damage. Do not touch or bend the processor's exposed pins.



Note: When adding a second processor to your system, you must remove the terminator from the secondary processor socket. Also, you must install a VRM into the VRM socket on the system board.

Opening and Removing the Front Door (Tower Version)

You must open the front door to remove the left side panel on your system. Perform this procedure to open and remove the front door.

1. Power off the system and ensure the power cord is unplugged from the AC wall outlet.
2. If the front door is locked, unlock it.
3. Grasp the indentation located on the right edge of the front door and pull the door towards you to open it (Figure 1).

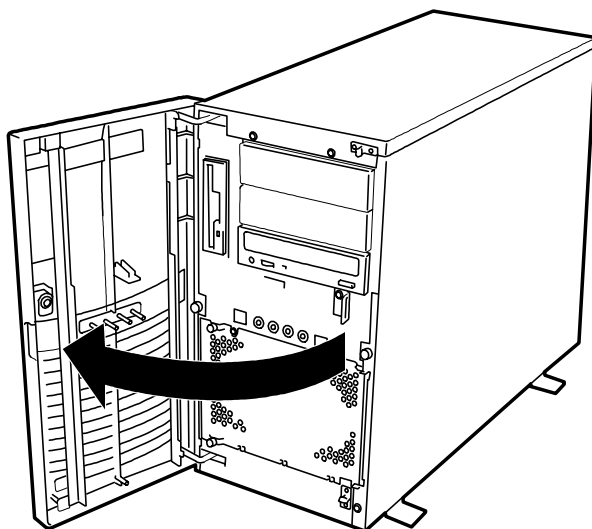


Figure 1. Opening the Front Door

4. To remove the front door, open it and lift the door and pull it towards you (see Figure 2). The mounting pins of the front door are disengaged from the mounting holes on the front of the system.

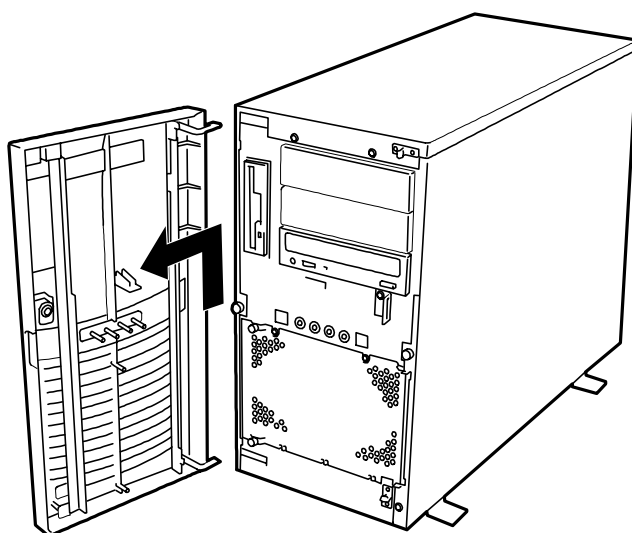


Figure 2. Removing the Front Door

Removing Side Panel

To install options in your system, you must remove the side panel on the left side of the system (as viewed from the front).



CAUTION

For proper cooling and airflow, do not operate the system with the side panels removed. Always replace the panels before powering on the system.



WARNING

If you are removing the side panel after the system is set up, you must first power off the system and all external devices and then **Unplug** the system power cord

To remove the left side panel:

1. The left side panel is secured to the chassis with one thumbscrew (Figure 3, A). Remove the screw securing the side panel. Save the screw for reattaching the side panel.
2. Using the indentation on the side of the panel, slide the side panel toward the front of the system. This unlocks the locking fingers behind the side panel.
3. Pull the side panel out and away from the chassis (Figure 3).

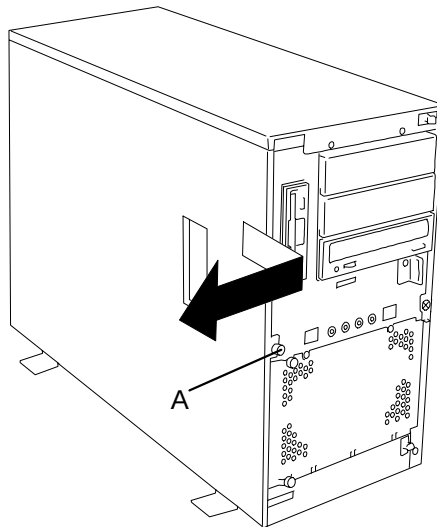


Figure 3. Removing the Left Side Panel

Removing the Air Duct

To install processor upgrade into your system, you must remove the system air duct. See Figure 4.

CAUTION

For proper cooling and airflow, do not operate the system with the air duct removed. Always replace the air duct and the side panels before powering on the system.

To remove the air duct:

1. Pull the air duct plunger (Figure 4, B) to release the air duct from the system chassis.
2. Pull the air duct out and away from the chassis (Figure 4, A).

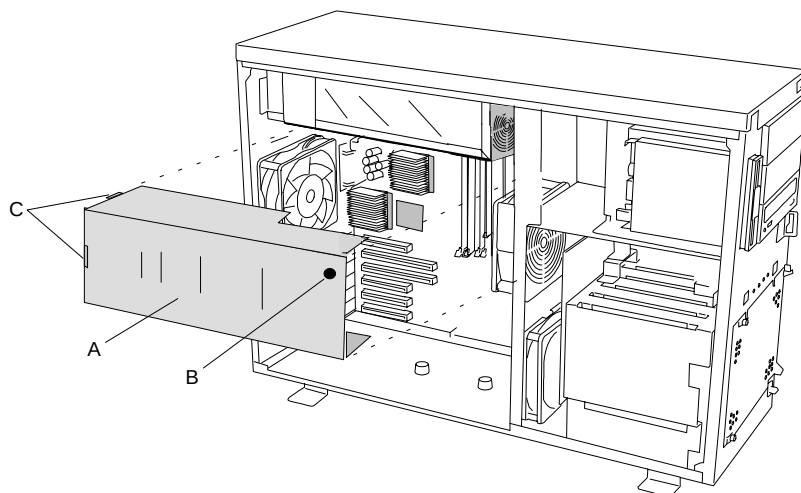
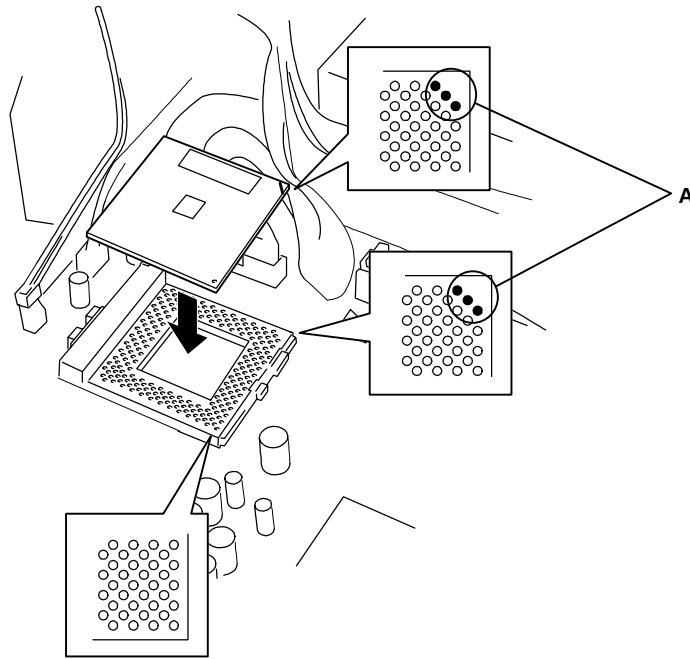


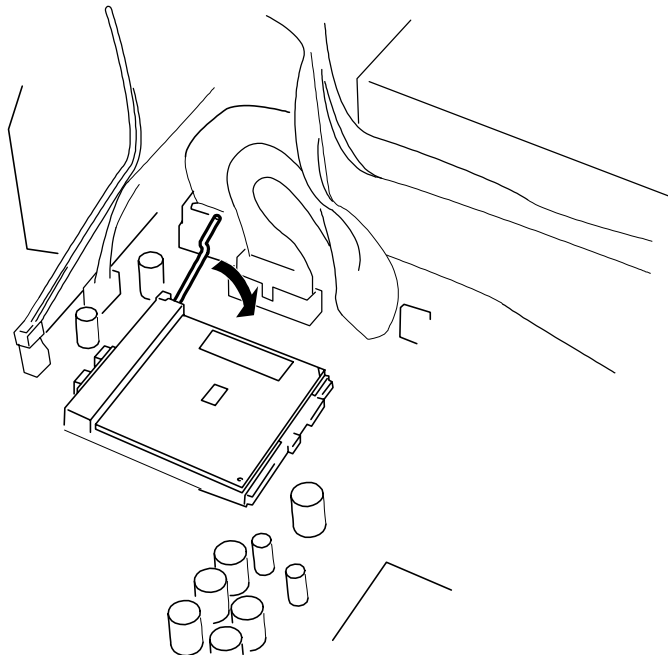
Figure 4. Removing the Air Duct

Installing the Processor Upgrade

1. Raise the secondary processor socket ZIF lever to the up position. See Figure 5.
2. Remove the terminator from the secondary processor socket.
3. Position the processor over its ZIF socket so the processor pins align with the socket holes. Note that one corner of the processor has three pins that should be positioned over the corner of the socket that has the three matching pin holes. See Figure 5, A.



4. Insert the processor pins into the socket. Apply pressure equally over the top surface of the processor until it seats in the socket. The processor should easily fit, do not force the processor into the socket.
5. Lower the ZIF socket lever into the locked position. See Figure 6.





CAUTION

The thermal pad is very delicate and tears easily. Handle with extreme care. Perform the next two steps exactly as described to ensure proper heat transfer from the processor to the heat sink.

6. One side of the thermal pad is shiny metallic foil. The other side of the thermal pad is covered with a clear plastic liner. Carefully peel the liner away from the pad. The clear liner is not used and may be discarded.
7. Position the thermal pad on top of the processor with the shiny side facing down and the yellow sticky side of the pad facing up. Ensure the pad is positioned over the center of the processor as shown in Figure 7.

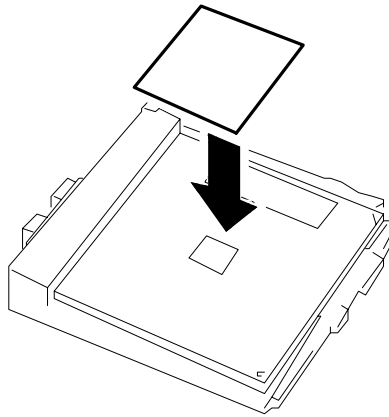


Figure 7. Installing Thermal Pad

8. Ensure the small end of the heat sink clip is positioned into the heat sink as far as it will go.



Note: The heat sink included with this upgrade may not resemble the heat sink on the processor in your system. Several types of heat sinks are used with the Pentium III processor.



CAUTION

When performing the next three steps, be sure the heat sink is positioned as shown and is held firmly in place. If the heat sink should slide across the top of the processor, the thermal pad may be damaged. In the next step, the heat sink must be gently lowered onto the processor, being careful not to move the heat sink from side to side.

-
9. The bottom of the heat sink is not completely flat, and instead has an L-shaped groove along two sides of the bottom. Position the heat sink over the processor so that the long side of the groove covers the rear plastic edge of the socket and the adjacent side of the groove covers the socket lever. See Figure 8. Gently lower the heat sink onto the processor, being careful not to move the heat sink from side to side.

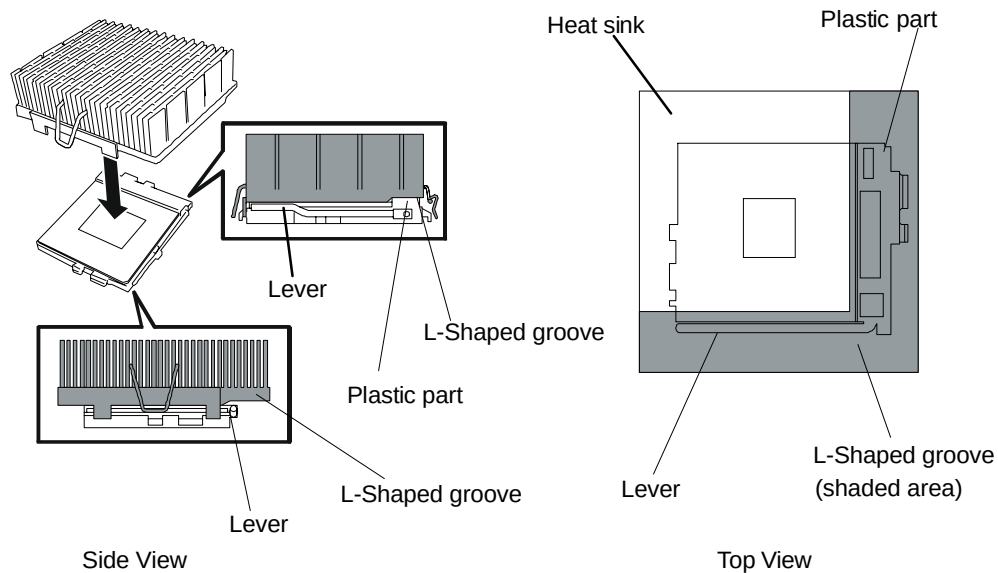


Figure 8. Positioning the Heat Sink Clip

-
- 10.** Attach the small end of the heat sink clip to the tab located on the base of the ZIF socket. See Figure 9, A.

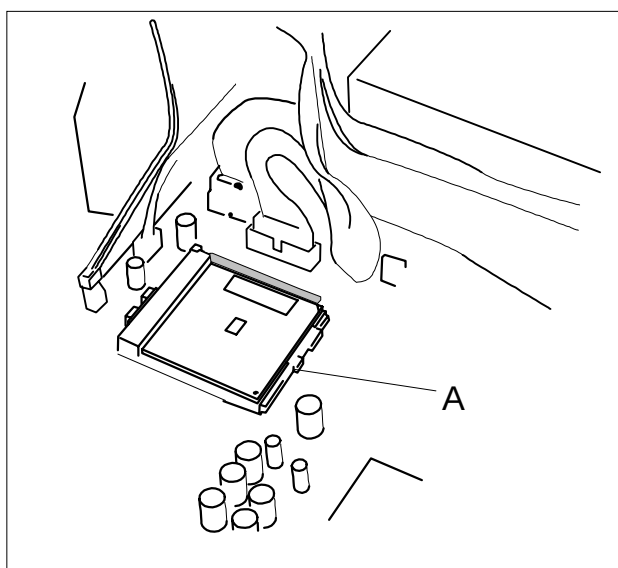
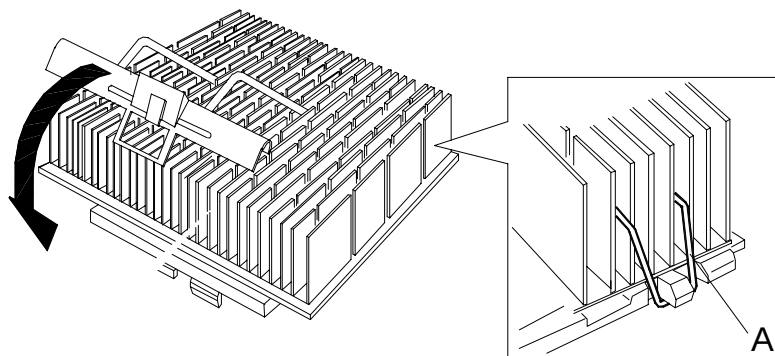


Figure 9. Positioning the Heat Sink Clip.

-
- 11.** Using a small flat blade screwdriver, press down on the heat sink clip retention latch and hook it under the fastener tab on the base of the ZIF socket, as shown in Figure 10, A. The heat sink clip is now secured to the fastener tab of the ZIF socket.

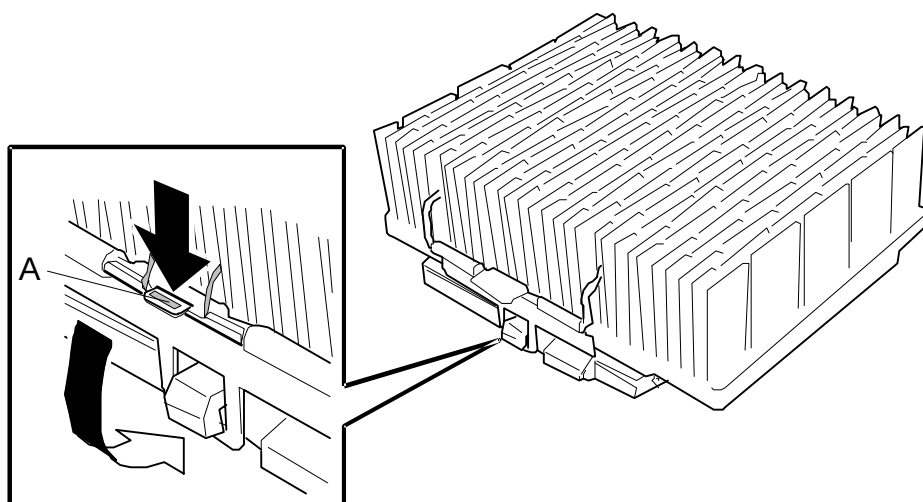


Figure 10. Installing Heat Sink Clip

- 12.** Install a VRM module into the system board. See Figure 11. Position the module over the socket on the board and press down evenly on the board until it seats correctly.

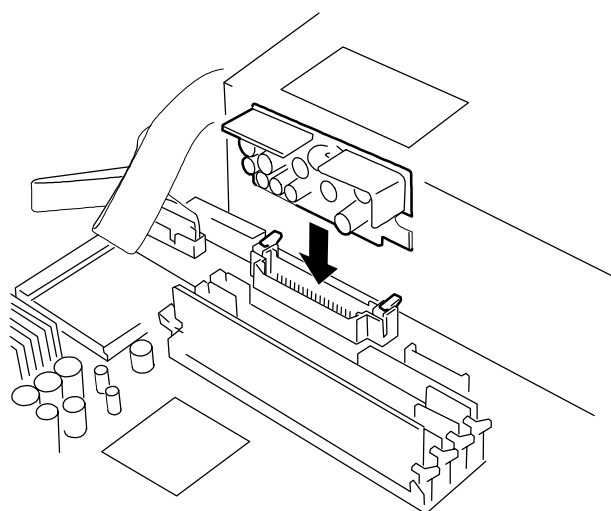


Figure 11. Installing the VRM Board

- 13.** Record the processor part number in the equipment log.

Installing the Air Duct

1. Position the air duct covering the front and rear system fans.
2. Position the air duct tabs (Figure 4, C) into the slots in the chassis rear panel.
3. Position the air duct plunger (Figure 4, B) over the locking hole in the chassis and push the plunger inwards to secure the air duct to the system chassis.

Installing the Side Panel

1. Before replacing the side panel, make sure no tools or loose parts have been left inside the system chassis.
2. Make sure all option boards are firmly seated in their respective slots and that all interior cables are properly connected.
3. Insert the metal tabs on the top and bottom of the side panel into their slots on the chassis. Slide the side panel rearward as far as it will go.
4. Replace the side panel retaining screw (see Figure 3, A).

Installing the Front Door

1. Position the front door so the mounting pins of the front door are aligned with their mounting holes on the front of the system. See Figure 2. Slide the lower mounting pin into its mounting hole and then slide in the upper pin.
2. Close and lock the front door.
3. Plug in the system power cord, and turn on the system.

Checking the CPU Temperature

The EXPRESSBUILDER CD-ROM, shipped with your system, includes the Iciser Lite Diagnostic Program. Perform this procedure to run Iciser Lite and verify the CPU you installed is operating at the correct temperature.

- 1 Insert the EXPRESSBUILDER CD-ROM into the CD-ROM drive and power up the system.
- 2 Select and execute the Iciser Lite Diagnostic Program.
- 3 View the CPU temperature indication display (Figure 12) and ensure the following temperature indications are within range:
 - CPU2 Temp does not exceed the ambient temperature by more than 30°.
 - CPU2 Temp does not exceed CPU1 Temp by more than 10°.

If the CPU2 Temp exceeds either of the ranges noted in this step, it is assumed the heat sink or thermal pad is installed incorrectly. Proceed to Step 4.

If the CPU2 Temp is within specified ranges, proceed to Step 8.

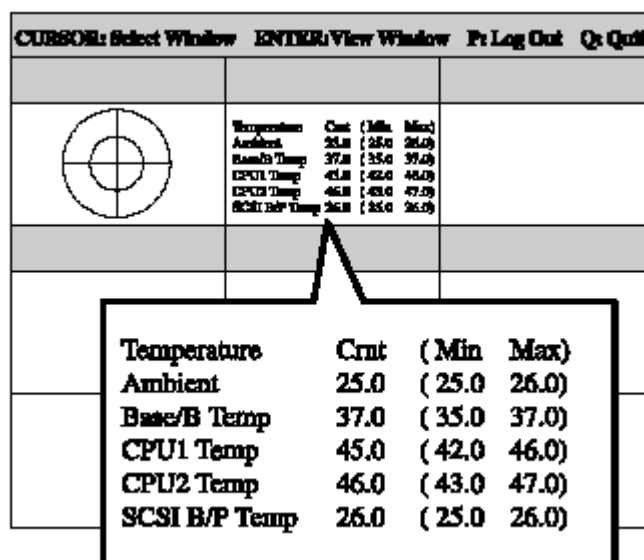


Figure 12. CPU Temperature Display Window

4. Press Ctrl + Alt + Delete to abort the diagnostics.
5. Press Q when the target scope appears, and select shutdown to power off the system.
6. Double check to ensure the thermal pad and the heat sink were installed correctly. Correct problems as necessary. Then proceed to Step 7.



CAUTION

When replacing the thermal pad, remove the old thermal pad completely from the CPU and the bottom of the heat sink. Always replace the thermal pad with a new pad.

7. Repeat this procedure if you installed a new thermal pad or adjusted the position of the heat sink. Once the CPU2 Temp is within the ranges specified in Step 3 of this procedure, perform the next step.
8. Verify POST has not displayed any error messages. If POST error messages are displayed, refer to the POST Error Codes and Messages table located in Chapter 5 or your system user's guide.

Updating System BIOS



Note: Refer to Chapter 3 of your system user's guide for detailed information on changing BIOS settings.

1. Power-on or reboot the system. "Press <F2> to enter SETUP" displays.
2. Press **F2**. The BIOS Setup Utility starts and the Main Menu is displayed.
3. Select "Advanced."
4. Select the "CPU Reconfiguration" submenu.
5. Verify CPU #2 is set to "Normal."
6. Return to the Advanced Menu.
7. Select "Advanced." The Advanced Submenu displays.
8. Select "Reset Configuration Data" and change this setting to "Yes".
9. Exit BIOS Setup saving the change made in this procedure. Your system reboots.

Updating System Configuration Settings

Windows 2000

This procedure adds an additional driver to enable “ACPI Multi-processor PC” in your system.

- 1.** Power-on or reboot the system. The Windows 2000 desktop is displayed.
- 2.** Right click on the “My Computer” icon on your desktop.
- 3.** Select “Properties.” The System Properties screen displays.
- 4.** Select “Hardware.”
- 5.** Select “Device Manager.” The Device Manager screen displays.
- 6.** Select “Computer.”
- 7.** Double click on “ACPI Uniprocessor PC Properties.” ACPI Uniprocessor PC Properties screen displays.
- 8.** Click on Driver.
- 9.** Click on Update Driver.
- 10.** Follow Update Device Driver Wizard Steps to update the ACPI Multi-processor PC.

Novell Netware

- 1.** Edit NetWare setting files to load the multi-processor module.

